

Waste Reduction Goal Task Force
BRIEFING PAPER
For
Non-Traditional Recycling

Background:

The terms Traditional and Non-Traditional recyclables are arbitrary terms use to describe those items that the public immediately thinks of as a recyclable or are out of the knowledge of the general public.

For years ad campaigns and educational programs have taught that recycling is healthy for the environment and the right thing to do. Items spoken about in these programs are often limited to paper, plastic, metal, and glass.

Often the paper, plastic, metal and glass is in the form of common household goods with a limited immediate use such as ; containers, newspaper, office paper, corrugated paper (commonly called cardboard), cans, and bottle; are thought of first when people think about recyclables.

Other popular recycling programs such as batteries, auto fluids, and residential food compost have started to become accepted under the terms of traditional recycling.

Although these items are what citizens of Tennessee might first cite when describing what a recyclable is, they constitute less than 5% of Tennessee total 2006 reported diversion.

Large scale bulk items such as mulch from brush and debris, industrial production overruns and byproducts, sewage sludge and a host of like items make up the bulk of all items within the Annual Progress Reports that are labeled as recyclables.

Without these items Tennessee's diversion rate would be much lower.

In coming to agreement of what items to count towards a diversion rate or recycling rate, there must be agreement and uniformity of qualified items. Standards must be established as to whether items such as foundry sand, fly ash, sawdust are counted.

Fly Ash

Fly ash is the finely divided mineral residue resulting from the combustion of coal in electric generating plants. In the past, fly ash produced from coal combustion was simply taken up by flue gases and dispersed into the atmosphere. This created environmental and health concerns that prompted laws which have reduced fly ash emissions to less than 1% of ash produced. Worldwide, more than 65% of fly ash produced from coal power stations is disposed of in landfills. In 2005, U.S. coal-fired power plants reported producing 71.1 million tons of fly ash, of which 29.1 million tons was reused in various

applications. If the nearly 42 million tons of unused fly ash had been recycled, it would have reduced the need for approximately 27,500 acre-feet of landfill space. Other environmental benefits to recycling fly ash includes reducing the demand for virgin materials that would need quarrying and substituting for materials that may be energy-intensive to create such as Portland cement. There has been some concern about trace heavy metal elements contained in fly ash; however, the EPA states that fly ash does not need to be regulated as a hazardous waste.

Sawdust

Sawdust is the by-product of sawmills. Unless sawdust is reprocessed into particleboard, burned in a sawdust burner or used to make heat for other milling operations, sawdust may collect in piles. The piles have been found to add harmful leachates into local water systems. While water-borne bacteria digest organic material in leachate, they use up much of the available oxygen. This can in turn cause water bodies to become anaerobic and suffocate other native organisms. This is also concern that lignins and fatty acids that protect trees from predators while they are alive can leach into water and poison wildlife. Normally these substances remain in the tree and slowly decay after the tree dies, but when present in a large volume of wood and large concentrations these substances into the water through runoff.

Foundry Sand

Spent foundry sands are generated by the metal casting industry. Foundries purchase new, virgin sand to make casting molds, and the sand is reused numerous times within the foundry. However, heat and mechanical abrasion eventually render the sand unsuitable for use in casting molds, and a portion of the sand is continuously removed and replaced with virgin sand. The spent foundry sand, that is, the sand that is removed, is either recycled in a non-foundry application or landfilled. Estimates are that less than 15 percent of the 6-10 million tons of spent foundry sands generated annually are recycled.

The EPA encourages the following uses of spent foundry sand.

- As partial replacement for fine aggregate in asphalt mixtures;
- As partial replacement for fine aggregate in Portland cement concrete;
- As source material for the manufacture of Portland cement; and
- As sand used in masonry mortar mixes.

Issues:

To Be Determined By Task Force

Focus Questions:

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